

### **In the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): A system for equipment malfunction detection and diagnosis, comprising:

equipment to process semiconductor work pieces and transfer status information thereof  
at preset intervals;~~and~~  
a detection/diagnosis unit coupled to the equipment to receive the status information,  
check whether the status information conforms to a process control standard, and  
if not, determine that the equipment has a malfunction; and  
a diagnostic database storing at least a recovery measure for the malfunction,  
wherein the recovery measure is retrieved by the detection/diagnosis unit if the equipment  
malfunctions.

Claim 2 (Original): The system as in claim 1 further comprising a status information database for storing the status information of the equipment.

Claim 3 (Original): The system as in claim 1 wherein the detection/diagnosis unit further generates a notification if the equipment malfunctions.

Claim 4 (Canceled)

Claim 5 (Original): The system as in claim 1 wherein the detection/diagnosis unit further stops operation of the equipment if the equipment malfunctions.

Claim 6 (Original): The system as in claim 1 wherein the status information comprises a parameter value corresponding to at least a process parameter.

Claim 7 (Original): The system as in claim 6 wherein the equipment is semiconductor furnace equipment.

Claim 8 (Original): The system as in claim 7 wherein the process parameter comprises a processed material identity, a wafer count, a process program identity, a chamber identity, an operator identity, a boat map, a step identity, a zone temperature, a pressure, a mass flow controller, a gas flow, a valve opening angle, or a leakage pressure.

Claim 9 (Currently Amended): A method for equipment malfunction detection and diagnosis, comprising the steps of:

processing semiconductor work pieces on equipment;

transferring status information of the equipment at preset intervals to a

detection/diagnosis unit;~~and~~

checking whether the status information conforms to a process control standard, and if

not, determining that the equipment has a malfunction;~~;~~ and

retrieving a recovery measure for the malfunction from a diagnostic database by the

detection/diagnosis unit.

Claim 10 (Original): The method as in claim 9 further comprising storing the status information of the equipment.

Claim 11 (Original): The method as in claim 9 further comprising generating a notification if the equipment malfunctions.

Claim 12 (Canceled).

Claim 13 (Original): The method as in claim 9 further comprising stopping operation of the equipment if the equipment malfunctions.

Claim 14 (Original): The method as in claim 9 wherein the status information comprises a parameter value corresponding to at least one process parameter.

Claim 15 (Original): The method as in claim 14 wherein the equipment is semiconductor furnace equipment.

Claim 16 (Original): The method as in claim 15 wherein the process parameter comprises a processed material identity, a wafer count, a process program identity, a chamber identity, an operator identity, a boat map, a step identity, a zone temperature, a pressure, a mass flow controller, a gas flow, a valve opening angle, or a leakage pressure